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interact with  $\sigma^{54}$ . These proteins are: NtrC of *S. typhimurium* (aa's 141-362) (SEQ ID NO:11), NifA of *K. pneumoniae* (aa's 213-43) (SEQ ID NO:12), DctD of *R. leguminosarum* (aa's 146-367) (SEQ ID NO:13), HydG of *E. coli* (aa's 142-363) (SEQ ID NO:14), and FlbD of *C. crescentus* (aa's 121-342) (SEQ ID NO:15). Amino acids that match the consensus generated for the set of sequences are boxed in black. The glycine rich region that encodes the nucleotide binding domain characteristic of  $\sigma^{54}$ -interacting proteins is underlined. Panel B shows a comparison of a C-terminal region of LuxO (SEQ ID NO:16) to that of NtrC (SEQ ID NO:17), HydG (SEQ ID NO:18) and FlbD (SEQ ID NO:19). In the box are the putative HTH DNA binding domains for LuxO, HydG and FlbD. The extended box shows the known HTH DNA binding region for NtrC.